

May 19, 1989

Docket No.: 50-352

Mr. George A. Hunger, Jr.
Director-Licensing
Philadelphia Electric Company
Correspondence Control Desk
P. O. Box 7520
Philadelphia, Pennsylvania 19101

DISTRIBUTION w/enclosures:

<u>Docket File</u>	ACRS (10)	EButcher
NRC PDR	GPA/PA	BGrimes
Local PDR	OGC	Brent Clayton
PDI-2 Rdg File	RDiggs, ARM/	EWenzinger
SVarga	LFMB	CSchulten
		OTSB
BBoger	TMeek(4)	
WButler	EJordan	
RClark	DHagan	
RMartin	Wanda Jones	
MO'Brien(2)	Tech Branch	

Dear Mr. Hunger:

SUBJECT: TECHNICAL SPECIFICATION CHANGES REGARDING REPORTING REQUIREMENTS ON PRIMARY COOLANT IODINE SPIKES (TAC NO. 62218)

RE: LIMERICK GENERATING STATION, UNIT 1

The Commission has issued the enclosed Amendment No. 20 to Facility Operating License No. NPF-39 for the Limerick Generating Station, Unit 1. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated August 19, 1986.

This amendment would revise the Technical Specifications to change the reporting requirements for iodine spiking from a short term report to an item to be included in the Annual Report and to eliminate the existing TS requirement to shutdown a plant if coolant iodine activity limits are exceeded for 800 hours in a 12 month period.

The amended TSs incorporate the revised reporting requirements which we proposed in the model TSs accompanying generic letter 85-19, "Reporting Requirements on Primary Coolant Iodine Spikes" which was issued September 27, 1985 to all licensees and holders of construction permits.

A copy of our Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original signed by
Richard J. Clark

Richard J. Clark, Project Manager
Project Directorate I-2
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 20 to License No. NPF-39
2. Safety Evaluation

cc w/enclosures:

See next page

[GAHUNGER]

PDI-2/PM
MO'Brien
5/19/89

PDI-2/PM
RClark: *RC*
05/11/89

OGC *OGC*
OGC
5/15/89

PDI-2/D
WButler
5/18/89

JFokp
11/18/89

8906020104 890519
PDR ADOCK 05000352
PDC



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

May 19, 1989

Docket No.: 50-352

Mr. George A. Hunger, Jr.
Director-Licensing
Philadelphia Electric Company
Correspondence Control Desk
P. O. Box 7520
Philadelphia, Pennsylvania 19101

Dear Mr. Hunger:

SUBJECT: TECHNICAL SPECIFICATION CHANGES REGARDING REPORTING REQUIREMENTS
ON PRIMARY COOLANT IODINE SPIKES (TAC NO. 62218)

RE: LIMERICK GENERATING STATION, UNIT 1

The Commission has issued the enclosed Amendment No. 20 to Facility Operating License No. NPF-39 for the Limerick Generating Station, Unit 1. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated August 19, 1986.

This amendment would revise the Technical Specifications to change the reporting requirements for iodine spiking from a short term report to an item to be included in the Annual Report and to eliminate the existing TS requirement to shutdown a plant if coolant iodine activity limits are exceeded for 800 hours in a 12 month period.

The amended TSs incorporate the revised reporting requirements which we proposed in the model TSs accompanying generic letter 85-19, "Reporting Requirements on Primary Coolant Iodine Spikes" which was issued September 27, 1985 to all licensees and holders of construction permits.

A copy of our Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard J. Clark".

Richard J. Clark, Project Manager
Project Directorate I-2
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 20 to License No. NPF-39
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. George A. Hunger, Jr.
Philadelphia Electric Company

Limerick Generating Station
Units 1 & 2

cc:

Troy B. Conner, Jr., Esquire
Conner and Wetterhahn
1747 Pennsylvania Ave., N.W.
Washington, D. C. 20006

Mr. Ted Ullrich
Manager - Unit 2 Startup
Limerick Generating Station
P. O. Box A
Sanatoga, Pennsylvania 19464

Mr. Rod Krich S7-1
Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Mr. John Doering
Superintendent-Operations
Limerick Generating Station
P. O. Box A
Sanatoga, Pennsylvania 19464

Mr. David Honan N2-1
Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Thomas Gerusky, Director
Bureau of Radiation Protection
PA Dept. of Environmental Resources
P. O. Box 2063
Harrisburg, Pennsylvania 17120

Mr. Graham M. Leitch, Vice President
Limerick Generating Station
Post Office Box A
Sanatoga, Pennsylvania 19464

Single Point of Contact
P. O. Box 11880
Harrisburg, Pennsylvania 17108-1880

Mr. James Linville
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Mr. Philip J. Duca
Superintendent-Technical
Limerick Generating Station
P. O. Box A
Sanatoga, Pennsylvania 19464

Mr. Thomas Kenny
Senior Resident Inspector
US Nuclear Regulatory Commission
P. O. Box 596
Pottstown, Pennsylvania 19464

Mr. Joseph W. Gallagher
Vice President, Nuclear Services
Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Mr. John S. Kemper
Senior Vice President-Nuclear
Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

PHILADELPHIA ELECTRIC COMPANY

DOCKET NO. 50-352

LIMERICK GENERATING STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 20
License No. NPF-39

1. The Nuclear Regulatory Commission (the Commission) has found that
 - A. The application for amendment by Philadelphia Electric Company (the licensee) dated August 19, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-39 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 20, are hereby incorporated into this license. Philadelphia Electric Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/S/

Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects I/II

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 19, 1989

PDI-2/D
MButler
5/19/89

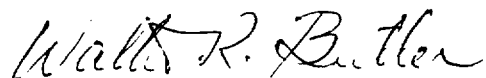
PDI-2/PM
RC Clark:m
05/11/89

OGE
5/15/89
to SE, check SE of issuance
5/15/89

PDI-2/D
WButler
5/18/89

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Walter R. Butler, Director
Project Directorate I-2
Division of Reactor Projects I/II

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 19, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 20

FACILITY OPERATING LICENSE NO. NPF-39

DOCKET NO. 50-352

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. Overleaf pages provided to maintain document completeness.*

Remove

3/4 4-15
3/4 4-16

B 3/4 4-3*
B 3/4 4-4

6-15*
6-16

Insert

3/4 4-15
3/4 4-16

B 3/4 4-3*
B 3/4 4-4

6-15*
6-16

6-16a

REACTOR COOLANT SYSTEM

3/4.4.5 SPECIFIC ACTIVITY

LIMITING CONDITION FOR OPERATION

3.4.5 The specific activity of the primary coolant shall be limited to:

- a. Less than or equal to 0.2 microcurie per gram DOSE EQUIVALENT I-131, and
- b. Less than or equal to 100/E microcuries per gram.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, and 4.

ACTION:

- a. In OPERATIONAL CONDITION 1, 2, or 3 with the specific activity of the primary coolant;
 1. Greater than 0.2 microcurie per gram DOSE EQUIVALENT I-131 but less than or equal to 4 microcuries per gram, DOSE EQUIVALENT I-131 for more than 48 hours during one continuous time interval or greater than 4.0 microcuries per gram DOSE EQUIVALENT I-131, be in at least HOT SHUTDOWN with the main steam line isolation valves closed within 12 hours. The provisions of Specification 3.0.4 are not applicable.
 2. Greater than 100/E microcuries per gram be in at least HOT SHUTDOWN with the main steamline isolation valves closed within 12 hours.
- b. In OPERATIONAL CONDITION 1, 2, 3, or 4, with the specific activity of the primary coolant greater than 0.2 microcuries per gram DOSE EQUIVALENT I-131 or greater than 100/E microcuries per gram, perform the sampling and analysis requirements of Item 4.a of Table 4.4.5-1 until the specific activity of the primary coolant is restored to within its limit.
- c. In OPERATIONAL CONDITION 1 or 2, with:
 1. THERMAL POWER changed by more than 15% of RATED THERMAL POWER in 1 hour, or
 2. The off-gas level, at the SJAE, increased by more than 10,000 microcuries per second in 1 hour during steady-state operation at release rates less than 75,000 microcuries per second, or
 3. The off-gas level, at the SJAE, increased by more than 15% in 1 hour during steady-state operation at release rates greater than 75,000 microcuries per second,perform the sampling and analysis requirements of Item 4.b of Table 4.4.5-1 until the specific activity of the primary coolant is restored to within its limit.

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS

4.4.5 The specific activity of the reactor coolant shall be demonstrated to be within the limits by performance of the sampling and analysis program of Table 4.4.5-1.

REACTOR COOLANT SYSTEM

BASES

3/4.4.3 REACTOR COOLANT SYSTEM LEAKAGE

3/4.4.3.1 LEAKAGE DETECTION SYSTEMS

The RCS leakage detection systems required by this specification are provided to monitor and detect leakage from the reactor coolant pressure boundary. These detection systems are consistent with the recommendations of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems," May 1973. In conformance with Regulatory Guide 1.45, the channel calibration tests will verify the ability to detect a 1 gpm leak in less than 1 hour and an atmospheric gaseous radioactivity system sensitivity of 10^{-6} $\mu\text{C}/\text{cc}$.

3/4.4.3.2 OPERATIONAL LEAKAGE

The allowable leakage rates from the reactor coolant system have been based on the predicted and experimentally observed behavior of cracks in pipes. The normally expected background leakage due to equipment design and the detection capability of the instrumentation for determining system leakage was also considered. The evidence obtained from experiments suggests that for leakage somewhat greater than that specified for UNIDENTIFIED LEAKAGE the probability is small that the imperfection or crack associated with such leakage would grow rapidly. However, in all cases, if the leakage rates exceed the values specified or the leakage is located and known to be PRESSURE BOUNDARY LEAKAGE, the reactor will be shutdown to allow further investigation and corrective action.

The Surveillance Requirements for RCS pressure isolation valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS pressure isolation valves is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.

3/4.4.4 CHEMISTRY

The water chemistry limits of the reactor coolant system are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low, thus the 0.2 ppm limit on chlorides is permitted during POWER OPERATION. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present so a 0.5 ppm concentration of chlorides is not considered harmful during these periods.

Conductivity measurements are required on a continuous basis since changes in this parameter are an indication of abnormal conditions. When the conductivity is within limits, the pH, chlorides and other impurities affecting conductivity must also be within their acceptable limits. With the conductivity meter inoperable, additional samples must be analyzed to ensure that the chlorides are not exceeding the limits.

The surveillance requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

REACTOR COOLANT SYSTEM

BASES

3/4.4.5 SPECIFIC ACTIVITY

The limitations on the specific activity of the primary coolant ensure that the 2-hour thyroid and whole body doses resulting from a main steam line failure outside the containment during steady state operation will not exceed small fractions of the dose guidelines of 10 CFR Part 100. The values for the limits on specific activity represent interim limits based upon a parametric evaluation by the NRC of typical site locations. These values are conservative in that specific site parameters, such as SITE BOUNDARY location and meteorological conditions, were not considered in this evaluation.

The ACTION statement permitting POWER OPERATION to continue for limited time periods with the primary coolant's specific activity greater than 0.2 microcurie per gram DOSE EQUIVALENT I-131, but less than or equal to 4 microcuries per gram DOSE EQUIVALENT I-131, accommodates possible iodine spiking phenomenon which may occur following changes in THERMAL POWER. Operation with specific activity levels exceeding 0.2 microcurie per gram DOSE EQUIVALENT I-131 but less than or equal to 4 microcuries per gram DOSE EQUIVALENT I-131 must be restricted since these activity levels increase the 2-hour thyroid dose at the SITE BOUNDARY following a postulated steam line rupture.

Closing the main steam line isolation valves prevents the release of activity to the environs should a steam line rupture occur outside containment. The surveillance requirements provide adequate assurance that excessive specific activity levels in the reactor coolant will be detected in sufficient time to take corrective action.

3/4.4.6 PRESSURE/TEMPERATURE LIMITS

All components in the reactor coolant system are designed to withstand the effects of cyclic loads due to system temperature and pressure changes. These cyclic loads are introduced by normal load transients, reactor trips, and startup and shutdown operations. The various categories of load cycles used for design purposes are provided in Section 3.9 of the FSAR. During startup and shutdown, the rates of temperature and pressure changes are limited so that the maximum specified heatup and cooldown rates are consistent with the design assumptions and satisfy the stress limits for cyclic operation.

ADMINISTRATIVE CONTROLS

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the Regional Office of the NRC unless otherwise noted.

STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following (1) receipt of an Operating License, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the unit.

6.9.1.2 The startup report shall address each of the tests identified in Subsection 14.2.12 of the Final Safety Analysis Report and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup reports shall be submitted within (1) 90 days following completion of the startup test program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the startup report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial operation) supplementary reports shall be submitted at least every 3 months until all three events have been completed.

ANNUAL REPORTS*

6.9.1.4 Annual reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

6.9.1.5 Reports required on an annual basis shall include:

- a. A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man-rem exposure according to work and job functions** (e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance [describe maintenance], waste processing, and refueling). The dose assignments to various duty functions may be estimated based on pocket

*A single submittal may be made for a multiple unit station.

**This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.

ADMINISTRATIVE CONTROLS

ANNUAL REPORTS (Continued)

- dosimeter, thermoluminescent dosimeter (TLD), or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole-body dose received from external sources should be assigned to specific major work functions;
- b. Documentation of all challenges to safety/relief valves; and
 - c. Any other unit unique reports required on an annual basis.
 - d. The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.5. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Cleanup system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.

MONTHLY OPERATING REPORTS

6.9.1.6 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the the main steam system safety/relief valves, shall be submitted on a monthly basis to the Director, Office of Resource Management, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Administrator of the Regional Office of the NRC no later than the 15th of each month following the calendar month covered by the report.

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT*

6.9.1.7 Routine Annual Radiological Environmental Operating Reports covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year. The initial report shall be submitted prior to May 1 of the year following initial criticality.

The Annual Radiological Environmental Operating Reports shall include summaries, interpretations, and an analysis of trends of the results of the radiological

*A single submittal may be made for a multiple unit station.

ADMINISTRATIVE CONTROLS

ANNUAL REPORTS (Continued)

environmental surveillance activities for the report period, including a comparison (as appropriate), with preoperational studies, operational controls and previous environmental surveillance reports and an assessment of the observed impacts of the plant operation on the environment. The reports shall also include the results of land use censuses required by Specification 3.12.2.

The Annual Radiological Environmental Operating Reports shall include the results of all radiological environmental samples and of all environmental radiation measurements taken during the report period pursuant to the locations specified in the tables and figures in the OFFSITE DOSE CALCULATION MANUAL, as well as summarized and tabulated results of these analyses and measurements in the format of the table in the Radiological Branch Technical Position, Revision 1, November 1979. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

The reports shall also include the following: a summary description of the radiological environmental monitoring program; at least two legible maps**

**One map shall cover stations near the SITE BOUNDARY; a second shall include the more distant stations.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 20 TO FACILITY OPERATING LICENSE NO. NPF-39

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION, UNIT 1

DOCKET NO. 50-352

1.0 INTRODUCTION

By letter dated August 19, 1986, Philadelphia Electric Company (the licensee) requested an amendment to Facility Operating License No. NPF-39 for the Limerick Generating Station, Unit 1. The proposed amendment would replace the requirement for a short term report on iodine spiking events with a requirement that an item discussing iodine spiking be included in the Annual Report. Additionally, the amendment eliminates the existing requirement to shutdown the plant if coolant iodine activity limits are exceeded for 800 hours in a 12 month period. Generic Letter No. 85-19, "Reporting Requirements on Primary Coolant Iodine Spikes" was issued on September 27, 1985 to all licensees and holders of construction permits. The Generic Letter stated that the NRC staff had determined that the reporting requirements for iodine spiking could be changed from a short term report (Special Report or Licensee Event Report) to an item which is to be included in the Annual Report. The information to be included in the Annual Report would be similar to that previously required in the Licensee Event Report but would be changed to more clearly designate certain desired information. Accordingly, by application dated August 19, 1986, the licensee requested that the Limerick Technical Specification (TS) Section 3.4.5, BASES Section 3/4.4.5 and Section 6.9.1.5 be amended to incorporate the revised reporting requirements as described in the Model TS accompanying Generic Letter No. 85-19.

2.0 EVALUATION

The current Limerick TS require short term Special Reports within 30 or 90 days in response to the requirements of TS 3.4.5 ACTION statements a.1, b and c. Certain additional information is also specified by TS 3.4.5 for inclusion in several of these short term reports.

In addition to these short term reporting requirements currently contained in the Limerick TS's, the Commission's regulations in 10 CFR 50.72 (Immediate Notification Requirements of Significant Events at Operating Nuclear Power Reactors) and in 10 CFR 50.73 (Licensee Event Report System) impose reporting requirements which include the following:

- (1) An LER is required following the completion of any plant shutdown, required by the TS [50.73 (a)(2)(i)].

8906020119 890519
PDR ADOCK 05000352
P PIC

- (2) One hour notification of the NRC is required when initiating a non-emergency event plant shutdown, which is required by the TS [50.72(b)(1)(i)].
- (3) One hour notification of the NRC is required in the event of fuel cladding failures that exceed expected values or that are caused by unexpected factors [50.72(b)(1)(ii)].

As stated in the BASES of the TS's, the purpose of the short term reporting requirements was to obtain information to assess the parameters associated with spiking phenomena. The staff's safety concerns associated with iodine spiking are primarily with respect to changes in coolant activity which may indicate a significant degradation of fuel cladding. The immediate notification and reporting requirements of 10 CFR 50.72 and 50.73 will provide the NRC with adequate notification of and information on an increase in coolant activity which is indicative of significant fuel degradation. Therefore, the staff has concluded that the notification and reporting requirements of the Commission's regulations in 10 CFR 50.72 and 10 CFR 50.73 in conjunction with the augmentation of the plant's annual Report as proposed by the licensee in accordance with the staff's Generic Letter 85-19 are sufficient to provide adequate information to the Commission. Accordingly, the Special Reports now specifically required by TS 3.4.5 may be eliminated in lieu of the other reporting requirements as discussed above.

Generic Letter No. 85-19 also stated that the staff had determined that the existing requirement to shutdown a plant if coolant iodine activity limits are exceeded for 800 hours in a 12-month period could be eliminated. The Generic Letter indicated that (a) on the basis of the improved quality of nuclear fuel which results in normal coolant iodine activity being well below the limit, (b) the likelihood of appropriate actions being taken long before accumulating 800 hours above the normal coolant iodine activity limit, and (c) the requirement of 10 CFR 50.72(b)(1)(ii) for prompt notification of NRC in the event of fuel cladding failures which exceed expected values, this 800 hour TS limit is no longer considered necessary since proper fuel management by licensees and existing reporting requirements should preclude ever approaching the limit. Accordingly, in the application dated August 19, 1986, the licensee also requested that Limerick TS Section 3.4.5 and BASES Section 3/4.4.5 be amended to delete the 800-hour limit.

The shutdown requirements of Technical Specification 3.4.5 are based on the consideration (TS BASES Section 3/4.4.5) that the specific activity level in the primary coolant should be limited to a relatively low level during plant operation so that, should a main steam line failure occur outside the containment, the dose rate from activity in the released coolant will not result in doses exceeding a small fraction of the dose guidelines of 10 CFR Part 100. Iodine spiking is a temporary increase in coolant iodine concentration associated with reactors having leaking fuel rods. These temporary increases in iodine concentrations have been observed to occur following changes in thermal power. An iodine spike is characterized by a rapid increase in coolant iodine concentration followed by a return to prespike concentrations.

During the course of the operating license review, the staff performed an analysis of the radiological consequences of main steam line failure outside the containment as discussed in Section 15 of the Safety Evaluation Report. The analysis was performed following the guidelines and criteria specified in Standard Review Plan (SRP) Section 15.6.4. An iodine concentration for continued full power operation was used in the analysis. This is the same equilibrium value stated in the licensee's Technical Specification. To account for the effect of potential iodine spiking (per Regulatory Guide 1.5) the equilibrium value was increased by a factor of 20 (to 4 micro Ci/gm) in the analysis. Other conservative assumptions used in the safety analysis include no plateout of iodine from the released coolant, no radioactive decay of Iodine 131 in transit and pessimistic meteorological conditions. Results of the analysis show that the doses will not exceed a small fraction of the dose guideline values of 10 CFR Part 100 for the equilibrium value and will not exceed the dose guideline values of 10 CFR Part 100 for the maximum value permitted, consistent with the criteria set forth in the Standard Review Plan.

Technical Specification 3.4.5 is intended to assure that the plant will operate within the values assumed in the safety analysis. The current TS imposes requirements for plant shutdown within 12-hours if the following activity level of the primary coolant is indicated:

- a. Greater than 0.2 micro Ci/gm dose equivalent I-131, but less than 4 micro Ci/gm for 48 hours continuous operation (to allow for iodine spiking by permitting temporary excursions); or,
- b. Greater than 4 micro Ci/gm dose equivalent I-131 at any time; or,
- c. Greater than 0.2 micro Ci/gm dose equivalent I-131, but less than 4 micro Ci/gm for cumulative 800-hours operation in any consecutive 12-month period.

In addition, Technical Specification 3.4.5 requires that, with the specific activity of the primary coolant greater than 0.2 micro Ci/gm dose equivalent I-131, the operator shall perform the sampling and analysis of the coolant activity level at least once every 4-hours until the activity level has returned to within the 0.2 micro Ci/gm limit.

Review of these requirements indicated that Items a. and b. in conjunction with the surveillance requirements provide reasonable assurance of operation within the bounds of the safety analyses. This is based on the following considerations: 1) Item b. requires shutdown any time an activity level of 4 micro Ci/gm is exceeded. This value of 4 micro Ci/gm is the upper limit value used in the staff analysis which indicated that doses would not exceed the guideline values in 10 CFR Part 100. 2) Item a. requires shutdown under conditions which indicate that significant fuel degradation may be occurring; and 3) the surveillance requirements require sampling every 4-hours once the activity level exceeds 0.2 micro Ci/gm, thus assuring that an activity level which exceeds 4 micro Ci/gm will be detected

within 4-hours and shutdown will then be required. Therefore, Items a. and b. require plant shutdown once significant fuel degradation is indicated and Item c. would only allow the plant to operate for a cumulative 800-hour period if the activity level remains between 0.2 to 4 micro Ci/gm for many successive periods of operation. Each of these periods which exceeded 48 hours would be followed by a shutdown, as noted in a. above, making such operation highly impractical. However, if the activity level is restored to a level below 0.2 micro Ci/gm within 48 hours, this indicates no significant fuel degradation. Thus, it is unlikely that 800 hours of operation above 0.2 micro Ci/gm without violating the requirements of item a. or item b. would occur, and the cumulative 800-hours limit necessitates a record-keeping requirement for fuel conditions which is not significant to safety. Moreover, none of the conservative assumptions used in the staff's dose assessment will be degraded by the deletion of the 800-hour limit. Therefore, based on the above considerations, the staff has concluded that the current TS 800-hour operating limit is unnecessary and can be eliminated.

The licensee's request for a revision of the Limerick Unit 1 Technical Specifications Section 3.4.5, BASES 3/4.4-5 and Administrative Controls Section 6.9.1.5 are acceptable on the bases discussed above and the finding that the proposed changes are consistent with the staff position and guidance described in the Model TS contained in Generic Letter No. 85-19.

3.0 COMMENTS AND HEARING REQUESTS PRIOR TO NOTICE

By letter dated August 19, 1986, the licensee applied to the NRC for an amendment of the TSs for Limerick Unit 1 in response to the staff's Generic Letter No. 85-19. On August 25, 1986, prior to the publication by the staff of any notice of its intent to issue the amendment or any finding with regard to the no significant hazards consideration, Mr. Robert A. Anthony (Anthony) filed a petition for leave to intervene and a request for a hearing on the licensee's proposed amendment. On September 4, 1986, also prior to the staff publication of any notice, Mr. Frank R. Romano, representing the Air and Water Pollution Patrol (AWPP), filed a petition to intervene and a request for a hearing.

The staff published in the Federal Register its intent to issue the requested amendment on March 12, 1987, in which it provided an opportunity to request a hearing and made a proposed determination that the requested amendment involved a no significant hazards consideration. The notice provided that any request for hearing must be received by April 13, 1987. Although no request for hearing was received during the period specified by the notice in the Federal Register, an Atomic Safety and Licensing Board (Board) was convened to rule on the prematurely filed pleadings.

Ultimately, over the objections of the Licensee and the Staff, the two intervenors were admitted as parties and a consolidated contention was admitted as an issue in controversy. Thereafter, on November 23, 1987, the Licensee filed its motion for summary disposition. The Staff filed its response in support of the Licensee's motion on February 18, 1988. Subsequently, the Staff and Licensee responded in affidavit form to additional questions posed by the Licensing Board.

In a Memorandum and Order dated May 5, 1988, LBP-88-12, 27 NRC 495(1988), the Licensing Board determined that the Licensee, as supported by the Staff, had sustained its burden of showing that there was no genuine issue of material fact to be litigated and held that the Licensee was entitled to a decision as a matter of law. In its Memorandum and Order, the Licensing Board found that the requested amendment, contrary to the allegations of the intervenors, would not result in a decrease in regulatory control; would not change release limits or reporting requirements for such releases; would not permit excessive one time releases and does not involve limits for radioactive gaseous releases. Accordingly, the Licensing Board granted the motion for summary disposition, terminated the proceeding and authorized the Director of Nuclear Reactor Regulation to issue the requested amendment.

The AWPP appealed the Order. In a Decision issued July 18, 1988, the Atomic Safety and Licensing Appeal Panel affirmed the Licensing Board's Order. ALAB-897, 28 NRC 33(1988) By memorandum dated September 30, 1988, the Secretary of the Commission informed the Board and Parties that the Commission declined any review of the Appeal Board decision, ALAB-897, and that the decision was the final agency action on the issue.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration [52 FR 7691-7693] and there has been no public comment on such finding other than the hearing requests that were received. Hearing requests that were received prior to the staff's proposed finding of no significant hazard consideration, were considered by the Atomic Safety and Licensing Board, and were disposed of on summary disposition. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

5.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (52 FR 7691) on March 12, 1987 and consulted with the State of Pennsylvania. The State of Pennsylvania did not have any comments.

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and the security nor to the health and safety of the public.

Principal Contributor: Dick Clark

Dated: May 19, 1989